



U.S. Department
of Transportation
**Research and
Special Programs
Administration**

NOV 26 2003

400 Seventh St., S.W.
Washington, D.C. 20590

Bradley A. Wagner, Sergeant
Carrier Enforcement Division
Nebraska State Patrol
P.O. Box 94907
Lincoln, Nebraska 68509-4907

Ref. No. 03-0033

Dear Sergeant Wagner,

This responds to your February 12, 2003, letter requesting clarification on § 173.29 of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) regarding the shipment of cylinders previously containing pharmaceutical grade oxygen. We apologize for the delay and hope it has not caused you any inconvenience. Specifically, you ask to what extent these empty oxygen cylinders must be purged (see 173.29(b)(2)(ii) to be excepted from the HMR.

Oxygen is a Division 2.2 non-flammable gas and as such is only subject to the regulations when the pressure in the cylinder equals or exceeds 280 kPa (40.6 psia) at 20° C (see § 173.115(b)(1)). Therefore, under § 173.29(b)(2)(ii), a Division 2.2 non-flammable gas, other than ammonia, anhydrous, and with no subsidiary hazard, at an absolute pressure less than 280 kPa (40.6 psia) is not subject to the HMR. For cylinders containing oxygen and other Division 2.2 non-flammable gases, if the pressure in the cylinder is 280 kPa (40.6 psia) or greater, the material is subject to all applicable HMR requirements. For a partially emptied cylinder containing a Division 2.2 non-flammable gas, the cylinder is fully regulated if the pressure in the cylinder is 280 kPa (40.6 psia) or greater, regardless of the quantity of gas remaining in the cylinder.

The HMR define "residue" to mean the hazardous material remaining in a packaging after its contents have been unloaded to the maximum extent possible. "Unloaded to the maximum extent possible" means that the hazardous material has ceased to flow out of the packaging's unloading device. Generally, empty packagings containing a residue of a hazardous material must be transported in the same manner as when they previously held a greater quantity of the material, unless the packagings are sufficiently cleaned and purged of vapors to remove any potential hazards, or are refilled with a material that is not subject to the HMR. However, in accordance with § 173.29(c), a non-bulk packaging containing only the residue of a hazardous material



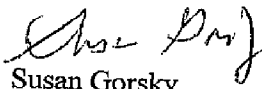
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173.29

covered by Table 2 of § 172.504 when collected and transported by a contract or private carrier for reconditioning, remanufacture or reuse is excepted from the shipping paper and placarding requirements.

I hope this answers your inquiry.

Sincerely,

A handwritten signature in cursive script, appearing to read "Susan Gorsky".

Susan Gorsky
Senior Transportation Regulations Specialist
Office of Hazardous Materials Standards

STATE OF NEBRASKA



Mike Johanns
Governor

February 12, 2003

Mr. Edward T. Mazzullo
Director, Office of Hazardous Materials Safety
US DOT/RSPA (DHM-10)
400 7th Street S.W.
Washington D.C. 20590

Dear Mr. Mazzullo:

The Nebraska State Patrol is requesting clarification concerning the transportation of compressed gases in cylinders. My questions concern pharmaceutical grade oxygen specifically and 2.2 gases generally. Is a cylinder, of pharmaceutical grade oxygen, approximately 18 to 24 inches in height and 4 inches in diameter, made of aluminum, charged to 500 psig considered empty? If the consumer considers the cylinder "empty," or at a pressure they no longer consider usable, does it fall under the exception provided in 49 CFR 173.29(c) regardless of the pressure? Is a cylinder with 500 psig of pharmaceutical grade oxygen considered to be a residue? If it is considered a residue, would it fall under 49 CFR 173.29 (c) and not be required to be manifested on the shipping paper when collected and transported by a private carrier for reuse (i.e., refilling)?

May, a private carrier consider 150 pound cylinders of 2.1 or 2.2 gases, having a pressure of 2000 psi, being returned for refilling, as a residue when only 500 psi has been used? If so, would the carrier have to include those cylinders when determining the applicability of the placarding and shipping paper requirements?

In 49 CFR 171.8 under the definition of residue please clarify RSPA's meaning of "maximum extent" in the phrase "unloaded to the maximum extent practicable"?

Title 49 CFR 173.29 (b)(2)(iv)(B) gives a threshold of 40.6 psia, for a division 2.2 gas to be considered empty for excepting these packagings from Subchapter C of Title 49 if they also conform to various other provisions. Does this mean that 40.6 psia is no longer hazardous? Is it correct to say that 40.6 psia is an acceptable level for excepting only the 2.2 gasses and not a 2.1?

Booth
§ 173.29(c)
Empty Packaging
03-0033

NEBRASKA STATE PATROL
Colonel Tom Nesbitt
Superintendent
P.O. Box 94907
Lincoln, Nebraska 68509-4907
Phone (402) 471-4545



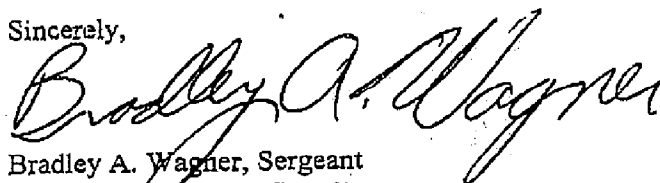
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Page 2
Edward T. Mazzullo
February 12, 2003

Thank you for your time and attention in this matter. If you have any questions please feel free to contact me at (402) 471-0105.

Sincerely,

A handwritten signature in black ink, reading "Bradley A. Wagner". The signature is fluid and cursive, with the first name "Bradley" and last name "Wagner" clearly legible. The middle initial "A." is smaller and less distinct.

Bradley A. Wagner, Sergeant
Hazardous Materials Coordinator
Carrier Enforcement Division

cc: Captain Jim Doggett.